

Excretion of acids by roots.—KUNZE²⁹ has extended the work of MOLISCH, PRIANISCHNIKOW, and CZAPEK on the general chemistry of the excretion of acids by roots, including a study of similar activity as exhibited by mycorrhizal fungi. CZAPEK'S conclusion that the excretions do not contain free mineral acids is confirmed, but the presence of acid salts of the mineral acids is denied and the corrosive effect is attributed exclusively to the organic acids. Tests with about two hundred different species widely separated in systematic standing shows that many plants do not excrete enough acid from the roots to be detected by litmus. Fungi excrete much more actively and it seems probable that they are more potent as soil disintegrators than the roots of higher plants. The author's work tends to increase his belief in mycorrhizal symbiosis. Whether intentional or not it seems a serious deficiency to omit the date from 23 of the total number of 35 citations.—RAYMOND H. POND.

Algae of northern seas.—An interesting paper by SIMMONS³⁰ discusses the history and relation of the algal floras of the North Atlantic and North Pacific to one another and to that of the Polar Sea. The Atlantic and Pacific Oceans are believed to have received a large number of species from the Polar Sea of Tertiary times, especially just before the ice age, when the algae were driven southward. Some of these became established and never returned to their old situations, but settled and became variously modified in their new life conditions. Others re-entered the Polar Sea with the retreat of the ice. This is a paper which will bear careful study by those familiar with the algal floras of the North Atlantic and Pacific, especially in comparison with BÖRGESEN'S *Algal vegetation of the Faeröese coasts* noticed in this journal 41:71. 1906.—B. M. DAVIS.

Grape diseases.—BUTLER³¹ has published some observations on three grape diseases: red-leaf, shrivel, and root-rot. The red-leaf seems to be a disease closely related to diseases known as *folletage*, *rougeot*, and California disease. Like the other diseases named, the red-leaf is probably due to disturbances in the balance between absorption of water by the roots and transpiration. It is possible that the disease may be checked to a considerable extent by increasing the fertility of the soil so as to render the plants more resistant. The shrivel is found mostly among the white grapes and is also due to disturbed nutrition or deficiency of water supply. The root-rot is similar to if not identical with the disease described in French literature as *pourridie*. It is caused by one or perhaps several fungi not yet fully determined. It often kills the vines in a single season but it may only kill the vines after three or more years.—E. MEAD WILCOX.

²⁹ KUNZE, GUSTAV., Ueber Säureausscheidung bei Wurzeln und Pilzhyphen und ihre Bedeutung. Jahrb. Wiss. Bot. 42:357-393. 1906.

³⁰ SIMMONS, H. G., Remarks about the relations of the floras of the Northern Atlantic, the Polar Sea, and the Northern Pacific. Beih. Bot. Centralbl. 19:149-194. 1905.

³¹ BUTLER, O., Observations on some vine diseases in Sonoma county, California. Bull. Calif. Exp. Stat. 168:1-29. 1 pl. figs. 1-5. 1905.